

TABLE 15

Toxin-Specific IgA Antibodies in the Saliva and Gut Fluids of Mice on Days 10 and 20 After Tertiary Oral Immunization with Soluble or Microencapsulated Enterotoxoid									
Enterotoxoid	dose (μg) per immunization	IgA anti-enterotoxin titer following tertiary oral immunization							
		Day 10		Day 20		Saliva		Gut Wash	
100	Micro-spheres	1,280	1,024	640	256				
100	Soluble	40	<8	10	<8				

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TABLE 19

Concentration of Etretinate in Mouse Serum After Oral Dosing with Microencapsulated and Unencapsulated Etretinate		
Etretinate Concentration, ng/ML		
	Times/hr	Microcapsules
10	1	4,569
	3	634
	6	242
	24	ND

ND = None detected

TABLE 16

Serum Anti-Toxin Antibody Levels Induced Through Intratracheal Immunization with Soluble or Microencapsulated Staphylococcal Enterotoxin B Toxoid											
Plasma anti-toxin titer on day following intratracheal immunization											
Enterotoxoid	dose (μg)	Form	10			20			30		
			IgM	IgG	IgA	IgM	IgG	IgA	IgM	IgG	IgA
50	50	Microencapsulated Soluble	<50	<50	<50	200	25,600	400	400	51,200	400
			<50	<50	<50	<50	<50	<50	<50	<50	<50

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TABLE 17

Bronchial-Alveolar Washing Antibody Levels Induced Through Intratracheal Immunization with Soluble or Microencapsulated Staphylococcal Enterotoxin B Toxoid											
Bronchial-alveolar washing anti-toxin titer on day following intratracheal immunization											
Enterotoxoid	dose (μg)	Form	10			20			30		
			IgM	IgG	IgA	IgM	IgG	IgA	IgM	IgG	IgA
50	50	Microencapsulated Soluble	<5	<5	<5	<5	80	<5	<5	1,280	320
			<5	<5	<5	<5	<5	<5	<5	<5	20

TABLE 18

Anti-SEB Toxin Antibody Responses Induced in Various Biological Fluids by Mixed Route Immunization Protocols Using Microencapsulated SEB Toxoid											
Route of Immunization	Dose of Microencapsulate SEB toxoid per	Immunization	Anti-toxin titer on day 20 following secondary immunization								
			Plasma			Gut Wash			Bronchial Wash		
Primary	Secondary	Immunization (μg)	IgM	IgG	IgA	IgM	IgG	IgA	IgM	IgG	IgA
1P	1P	100	3,200	1,638,400	<50	<20	10,240	<20	<5	10,240	<5
1P	Oral	100	1,600	204,800	<50	<20	640	640	<5	2,560	1,280
1P	1T	100	1,600	819,200	<50	<20	2,560	2,560	<5	20,480	2,560

What is claimed is:

65 1. A composition for potentiating the immune response of an animal, comprising a mixture of effective amounts of first biocompatible microcapsules having a size between